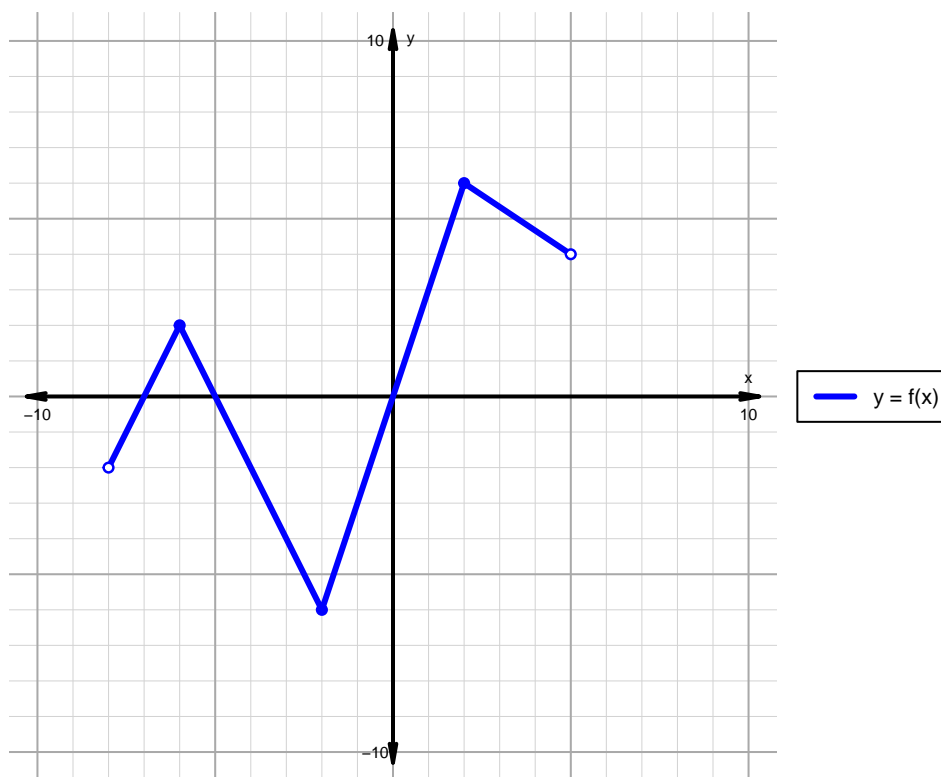


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 50)**

1. The function  $f$  is graphed below.

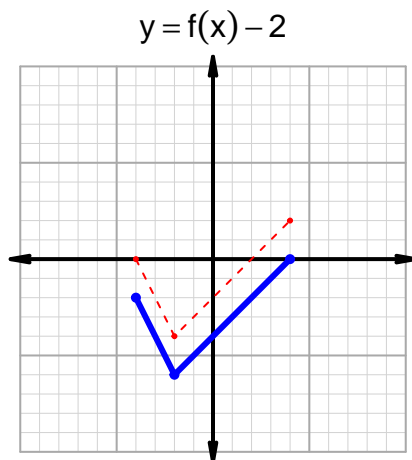
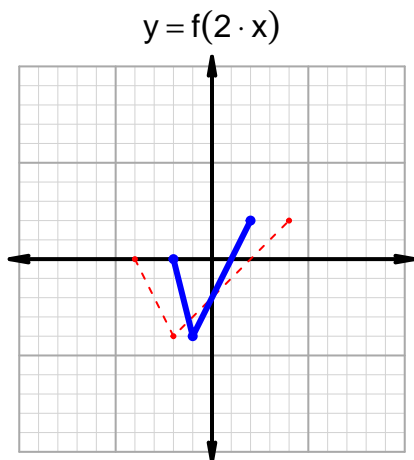
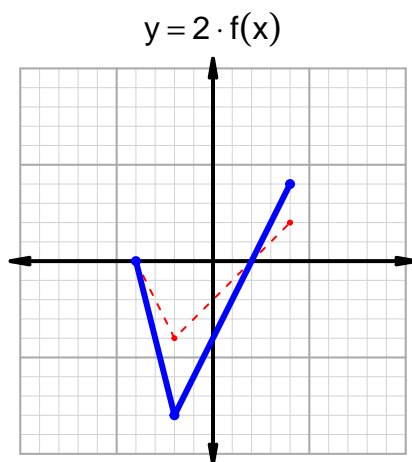
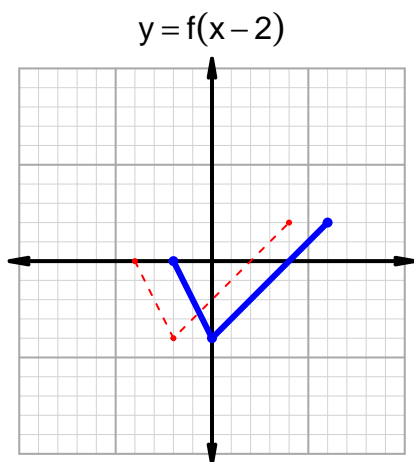


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-7, -5) \cup (0, 5)$
Negative	$(-8, -7) \cup (-5, 0)$
Increasing	$(-8, -6) \cup (-2, 2)$
Decreasing	$(-6, -2) \cup (2, 5)$
Domain	$(-8, 5)$
Range	$(-6, 6)$

## Intervals, Transformations, and Slope Solution (version 50)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 64$  and  $x_2 = 85$ . Express your answer as a reduced fraction.

$x$	$g(x)$
8	64
23	85
64	23
85	8

$$\frac{g(85) - g(64)}{85 - 64} = \frac{8 - 23}{85 - 64} = \frac{-15}{21}$$

The greatest common factor of -15 and 21 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-5}{7}$$